

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



Figure 1 (page 1 of 7)

Members of the TNF/TNFR Superfamily							
	Standardized	Other Names	Accession	Human Chromosome	Mouse Chromosome	Phenotypes Associated With Mutations	Additional Functional Observations
Receptor							
NGFR	TNFRSF16	p75	M14764	17q21-q22	11, 55.6 cM	Defective sensory neuron innervation; impaired host sensitivity	
Troy	TNFRSF19	Tn/	AF167558	13q12.11-12.3	14		Expressed in hair follicles and epithelium; the mouse gene is located near the waved coat locus
EDAR			AF130988	2q11-q13	10, 29.0 cM	Hypohydrotic ectodermal dysplasia – abnormal tooth, hair and sweat gland formation	
XEDAR		EDA-A2R		AF298812	κ		Likely role in skin, hair and tooth formation
CD40	TNFRSF5	p50, β p50	X60892	20q12-q13.2	2, 97.0 cM	Defective Ig class switching and GC formation causing immunodeficiency	
DcR3	TNFRSF6B		AF104419	20q13			Secreted decoy receptor for FasL with possible role in tumor evasion

Figure 1 (page 2 of 7)

FAS	TNFRSF8	CD95, APO-1, APT1	M87454	10q24,1	19, 23.0 cM	Impaired activation-induced T cell death; lymphoproliferation, autoimmunity (ALPS)	
OX40	TNFRSF4	CO134, ACT35, TXGP1L	X75982	1p36	4, 79.4 cM	Defective T cell responses	
AITR	TNFRSF18	GTR	AF125304	1p36.9	4		Glucocorticoid-induced; inhibits T cell receptor-dependent apoptosis
CO30	TNFRSF6	KI-1, D189GE	M83554	1p36	4, 75.5 cM		Marker of Reed-Sternberg cells in Hodgkin's disease
HveA	TNFRSF14	MVEM, ATAR, TR2, LIGHTR	U70321	1p36.5-p36.2			Probable role in T cell proliferation and receptor for herpes simplex virus
4-1BB	TNFRSF9	CD137.JLA	L12964	1p36	4, 75.5 cM		Probable role in T cell responses
TNFR2	TNFRSF18	CD120b, p75, TNF8R, TNFR80, TNF-R-II	M32316	1p36.3-p36.2	4, 75.5 cM	Increased sensitivity to bacterial pathogens; decreased sensitivity to LP8 reduced antigen-induced T cell apoptosis	

Figure 1 (page 3 of 7)

DR3	TNFRSF12	TRAMP, WSL-1, LARD, W8L-LR, DDR3, TR3, APO-3	U727GS	1p36.2			A linked, partially duplicated copy of the gene encodes a potential decoy receptor
CD27	TNFRSF7	7p50,S182	M69928	12p13	6, 60.35 cM	Defective T cell responses	
TNFR1	TNFRSF1A	CD120s p55- R, TNFAR TNFR60 TNF-R-I	M75866	12p13.2	6, 60.55 cM	Impaired clearance of bacterial pathogens; resistance to LPS; LN present; defective GC formation; defective PP formation	
LTBR	TNFRSF3	TNFR2-RP, TNFCR, TNF-R-III	L04270	12p13	6, 60.4 cM	Absence of LN, PP; defective GC formation	
RANK	TNFRSF11A	TRANCE-R	AF018253	18q22.1		Osteopetrosis; absence of osteoclasts; absence of lymph nodes; PP present; abnormal B cell development	Required for lactating mammary gland development
TAC1		CAML interactor	AF023614	17p11	11		Probable role in B cell responses
BCMA	TNFRSF17	BCM	229574	16p13.1			Probable role in B cell responses
DR6	TR7	NM_014452	6p21.1-12.2				
OPG	TNFRSF118	OCIF, TR1 osteo- protegerin	U94332	8Q24		Osteoporosis; arterial calcification	

Figure 1 (page 4 of 7)

DR4	TNFRSF10A	Apo2, TRAILR-1	U90876	8p21			Probable inducer of lymphocyte death and activation
DR5	TNFRSF10B	KILLER, TRICK2A, TRAIL-R2, TRICKB	AF012628	8p22-p21			Probable inducer of lymphocyte death and activation
DcR1	TNFRSF10C	TRAILR3, LIT, TRID	AF012536	8p22-p21			GPL-linked decoy receptor – interferes with TRAIL signaling
DcR2	TNFRSF10D	TRUNDD TRAILR4	AF029761	8p21			Transmem-brane decoy receptor – interferes with TRAIL signaling

Figure 1 (page 5 of 7)

Members of the TNF/TNFR Superfamily							
	Standardized	Other Names	Accession	Human Chromosome	Mouse Chromosome	Phenotypes Associated With Mutations	Additional Functional Observations
Ligand							
EDA		EDA1	NM_001309	Xq12-q13.1	X, 37.0 cM	Hypohidrotic ectodermal dysplasia – abnormal tooth, hair and sweat gland formation	
CD40L	TNFSF5	IMD3, MIGM1, TRAP, CD154 gp39	X67878	Xq26	X, 18.0 cM	Defective T cell and Ig β responses; hyper IgM syndrome	
FasL	TNFSF6	AFT1LG1	U11821	1q23	1, 85.0 cM	Impaired activation-induced T cell death; lymphoproliferation; autoimmunity; ALPS	
OX40L	TNFSF4	Gp34 TXGP1	D90224	1q25	1, 84.9 cM	Defective T cell responses	
AITAL	TNFSF18	TL6, hG/TRL	AF125303	1q23			Inhibits T cell receptor-dependent apoptosis
CD30L	TNFSF8		L09753	9q33	4, 32.2 cM		Possible role in malignant lymphocyte disorders
VEGI	TNFSF15	TL1	AF039390				Potential vascular endothelial cell growth inhibitor

Figure 1 (page 6 of 7)

LIGHT	TNFSF14	LT HVEM-L	AF036581	19 (probable)	17		
4-1BBL	TNFSF9		U03598	19p13.3	17	Defective T cell responses	
CD27L	TNFSF7	CD70	L08096	19p13	17, 20.0 cM		
LT α	TNFSF1	TNFB, LT	X01393	6p21.3	17, 19.06 cM	Absence of LN and PP; disorganized splenic microarchitecture; defective GC formation	
TNF	TNFSF2	Tumor necrosis factor; ceclectin, TNFA DIF	X01394	6p21.3	17, 19.06	LN present; defective GC formation; increased susceptibility to microbial pathogens	
LTB	TNFSF3	TNFC, p39	L11015	6p21.3	17, 19.081	Absence of peripheral LN and PP; presence of menorrhic and some cervical LN; defective GC formation	
TWEAK	TNFSF12	DR3L APO3L	AF030099	17p13	117		Potential role in monocyte and NK cell cytotoxicity
APRIL	TNFSF13		NM_003809	17p13.1	117		Probable role in B cell responses
BLYS	TNFSF13B	BAFF, THANK, TALL1	AF132600	13q32-34			Probable role in B cell responses

Figure 1 (page 7 of 7)

RANKL	TNFSF11	TRANCE, OPGL, ODF	AF013171	13q14	14, 45.0	Osteopetrosis; absence of osteoclasia; absence of lymph nodes; PP present; normal splenic architecture; abnormal D cell and T cell development	Required for isolating mammary gland development
TRAIL	TNFSF10	Apo-2L TL2	U37518	3q26			

INHIBITORS OF APOPTOSIS
Oncogene Research Products

<u>PRODUCT NAME</u>	<u>MOLECULAR WEIGHT</u>	<u>SEQUENCE</u>	<u>CAT. NO.</u>	<u>KNOWN TARGET CASPASES</u>
A23187, Free Acid, <i>Streptomyces chartreusensis</i>	523.6		100105	
A23187, Mixed Calcium-Magnesium Salt			100106	
N-Acetyl-L-cysteine	163.2		106425	
Actinomycin D, <i>Streptomyces</i> sp.	1255.5		114666	
6-Amino-1,2-benzopyrone, Hydrochloride	197.6		130070	
5-Aminoisoquinolinone, Hydrochloride	196.7		164300	
3-Aminobenzamide	136.2		165350	
ALLN	383.5	N-Acetyl-Leu-Nle-CHO	208719	
ALLN in Solution	383.5		208750	
ALLM	401.6	N-Acetyl-Leu-Leu-Met-CHO	208721	
Anisomycin, <i>Streptomyces griseolus</i>	265.3		176880	
Antimycin A3	520.6		178205	
Antimycin A3, 2-Methoxy-	534.6		178210	
Aphidicolin	338.5		178273	
Aurintricarboxylic Acid	422.4		189400	
Baicalein	270.2		196322	
BAPTA/AM	764.7		196419	

Figure 2 (page 1 of 12)

<i>bcl</i> -2 Antisense Oligonucleotide, Sodium Salt	6058.6			197208	
<i>bcl</i> -2 Antisense Oligonucleotide, Sodium Salt, Fluorescein-Labeled	6634.1			197211	
<i>bcl</i> -2 Antisense Oligonucleotide, Sodium Salt, Negative Control	6058.6			197210	
<i>bcl</i> -2 Antisense Oligonucleotide Set				197212	
<i>bcl</i> -x ₃ Antisense Oligonucleotide, Sodium Salt	7426			197203	
<i>bcl</i> -x ₃ Antisense Oligonucleotide, Sodium Salt, Fluorescein-Labeled	8001.5			197206	
<i>bcl</i> -x ₃ 2 Antisense Oligonucleotide, Sodium Salt, Negative Control	7346.1			197205	
<i>bcl</i> -x ₃ 2 Antisense Oligonucleotide Set				197214	
Betulinic Acid	456.7			200498	
BH3I-1	320.4			286890	
BH3I-2'	556.5			286891	
Bongkreic Acid, Triammonium Salt	537.7			203671	
Caffeine	194.2			205548	
Calpain Inhibitor III	382.5		Z-Val-Phe-CHO	208722	
Calpain Inhibitor IV	557.7		Z-Leu-Leu-Tyr-CH ₂ F	208724	
Calpain Inhibitor V	407.5		Mu-Val-HPH-CH ₂ F Mu = morpholinouridyl; HPh = homophenylalanyl	208726	

Figure 2 (page 2 of 12)

Calpain Inhibitor VI	372.5	4-Fluorophenylsulfonyl-Val-Leu-CHO	208745	
Calpain Inhibitor Set			208733	
Calyculin A, <i>Discodermia calyx</i>	1009.2		208851	
Caspase Active Site Peptide	688.8		235416	
Caspase Inhibitor I	467.5	Z-Val-Ala-Asp(OMe)-CH ₂ F	627610	1,3,4,7
Caspase Inhibitor I, Biotin Conjugate	672.8		218742	1,3,4
Caspase Inhibitor I, Cell-Permeable	1827.3		218830	
Caspase Inhibitor I, Cell-Permeable in Solution	1827.3	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Val-Ala-Asp-CHO	218831	
Caspase Inhibitor II	329.4	Ac-Val-Ala-Asp-CHO	218735	1,3,4,7
Caspase Inhibitor III	263.3	Boc-Asp-(OMe)-CH ₂ F	218745	All
Caspase Inhibitor IV	355.8	Boc-Asp(OB ₂ l)-CMK	218784	1
Caspase Inhibitor V, Biotin Conjugate	863.0	Z-Val-Lys-X-(Biotin)-Asp(OMe)-CH ₂ F(x = linker)	219000	All

Figure 2 (page 3 of 12)

Caspase Inhibitor VI	453.5	Z-Val-Ala-Asp-CH ₂ F	219007	1,3,4,7
Caspase Inhibitor VII	377.8	Ac-Val-Ala-Asp-CMK	218726	1,3,4,7
Caspase Inhibitor VIII	543.6	Ac-Val-Asp-Val-Ala-Asp-CHO	218729	2,3,7
Caspase Inhibitor Negative Control	386.4		342000	
Group III Caspase Inhibitor I	610.6	Z-Ala-Glu-(OMe-Val-Asp(OMe)-CH ₂ F	368620	6,8,9,10
Group III Caspase Inhibitor II	458.5	Ac-Ala-Glu-Val-Asp-CHO	368625	6,8,9,10
Caspase Inhibitor Set I			235429	1
Caspase Inhibitor Set II			218772	1,2,3,5,6,8,9
Caspase Inhibitor Set III			218806	
Caspase Inhibitor Set IV			218825	
Caspase Inhibitor, Fluorogenic	775.7	DACF _{5,6} -VAD-FMK	218827	1,3,4,7
Caspase-1 Inhibitor	492.5	Ac-Tyr-Val-Ala-Asp-CHO	400010	1,4
Caspase-1 Inhibitor, Cell-Permeable	1990.5	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Leu-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Tyr-Val-Ala-Asp-CHO	400011	1,4
Caspase-1 Inhibitor II	541.0	Ac-Tyr-Val-Ala-Asp-CMK	400012	1,4

Figure 2 (page 4 of 12)

Caspase-1 Inhibitor II, Biotin Conjugate	725.3	Biotin-Tyr-Val-Ala-Asp-CMK	400022	1,4
Caspase-1 Inhibitor III, Biotin Conjugate	946.9	Biotin-Tyr-Val-Ala-Asp-Fluoroacetyloxymethylketone	400024	1,4
Caspase-1 Inhibitor IV	654.7	Ac-Tyr-Val-Ala-Asp	400015	1,4
Caspase-1 Inhibitor V	454.3	Z-Asp-CH ₂ -DCB	400019	All
Caspase-1 Inhibitor VI	630.7	Z-Tyr-Val-Ala-Asp(OMe)-CH ₂ F	218746	1,4
Caspase-1 Inhibitor VII, Biotin Conjugate	938.1	Ac-Tyr-Val-Lys(biotinyl)-Asp-2,6-Dimethyl-benzoyloxymethylketone	218786	1
Caspase-1 Inhibitor VIII	611.6	Ac-Trp-Glu-His-Asp-CHO	218727	1,8
Caspase-2 Inhibitor I	695.7	Z-Val-Asp(OMe)-Val-Ala-Asp(OMe)-CH ₂ F	218744	2
Caspase-2 Inhibitor II	603.6	Ac-Leu-Asp-Glu-Ser-Asp-CHO	218814	2

Figure 2 (page 5 of 12)

Caspase-3 Inhibitor I	502.5	Ac-Asp-Glu-Val-Asp-CHO	235420	3,6,7,8,10
Caspase-3 Inhibitor I, Biotin Conjugate	686.7	Biotin-Asp-Glu-Val-Asp-CHO	235422	3,6,7,8,10
Caspase-3 Inhibitor I, Cell-Permeable	2000.4	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Asp-Glu-Val-Asp-CHO	235423	3,6,7,8,10
Caspase-3 Inhibitor I, Cell-Permeable in Solution	2000.4		235427	
Caspase-3 Inhibitor II	668.7	Z-Asp(OCH ₃)-Glu(OCH ₃)-Val-Asp-(OCH ₃)-PMK	264155	3,6,7,8,10
Caspase-3 Inhibitor II in Solution	668.7		264156	
Caspase-1 Inhibitor II, Biotin Conjugate	873.0	Biotin-X-Asp(OMe)-Glu(OMe)-Val-Asp(OMe)-CH ₂ F (X = Linker)	218747	3,6,7,8,10
Caspase-3 Inhibitor III	551.0	Ac-Asp-Glu-Val-Asp-CMK	218750	3,6,7,8,10
Caspase-3 Inhibitor IV	533.6	Ac-Asp-Met-Gin-Asp-CHO	235421	3

Figure 2 (page 6 of 12)

Caspase-3 Inhibitor V	685.7	Z-Asp(OMe)-Gin-Met-Asp(OMe)-CH ₂ F	219002	3	
Caspase-3 Processing Inhibitor	506.5	Ac-Glu-Ser-Met-Asp-CHO	218787	3	
Caspase-3/7 Inhibitor I	324.4		218826		
Caspase-4 Inhibitor I	500.6	Ac-Leu_Glu-Val-Asp-CHO	218755	4	
Caspase-4 Inhibitor I, Cell Permeable	1998.5	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Leu-Glu-Val-Asp-CHO	218766	4	
Caspase-5 Inhibitor I	763.8	Z-Trp-Glu(OMe)-His-Asp(OMe)-CH ₂ F	218753	1,4,5	
Caspase-6 Inhibitor I	652.7	Z-Trp-Glu(OMe)-Ile-Asp(OMe)-CH ₂ F	218757	6	
Caspase-6 Inhibitor II	500.5	Ac-Val-Glu-Ile-Asp-CHO	218758	6	

Figure 2 (page 7 of 12)

Caspase-6 Inhibitor II, Cell Permeable	1998.5	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Leu-Glu-Ile-Asp-CHO	218767	6
Caspase-8 Inhibitor I, Cell Permeable	2000.4	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Ile-Glu-Thr-Asp-CHO	218773	8, Granzyme B
Caspase-8 Inhibitor II	654.7	Z-Ile-Glu(OMe)-Thr-Asp(OMe)-CH ₂ F	218759	8, Granzyme B
Caspase-8 Inhibitor II in Solution	654.7		218840	
Caspase-9 Inhibitor I	690.7	Z-Leu-Glu(OMe)-His-Asp(OMe)-CH ₂ F	218761	9
Caspase-9 Inhibitor I in Solution	690.7		218841	

Figure 2 (page 8 of 12)

Caspase-9 Inhibitor II, Cell Permeable	2036.5	Ac-Ala-Ala-Val-Ala-Leu-Leu-Pro-Ala-Val-Leu-Leu-Ala-Leu-Leu-Ala-Pro-Leu-Glu-His-Asp-CHO	218776	9
Caspase-9 Inhibitor III	587.0	Ac-Leu-Glu-His-Asp-CMK	218728	9
Caspase-13 Inhibitor I	530.5	Ac-Leu-Glu-Glu-Asp-CHO	219005	13
Caspase-13 Inhibitor II	696.7	Z-Leu-Glu(OMe)-Glu(OMe)-Asp-(OMe)-FMK	219009	13
Catalase, Human Erythrocytes	256,000		219008	
Caspase Inhibitor, Negative Control	386.4	Z-Phe-Ala-FMK	342000	
Cycloheximide, High Purity	281.3		239764	
Cyclosporin A, <i>Tolypocladium inflatum</i>	1202.6		239835	
3,4-Dichloroisocoumarin	215.0		287815	
Diisopropylfluorophosphate	184.2		30967	
Disulfiram	296.5		322150	1,3
DPQ	302.4		300270	
EMAPII Inhibitor	556.6	Z-Ala-Ser-Thr-Asp(OMe)-CH ₂ F	324678	
N-Ethylmaleimide	125.1		34115	
Genistein	270.2		345834	

Figure 2 (page 9 of 12)

Granzyme B Inhibitor I	441.9	Z-Ala-Ala-Asp-CH ₂ Cl	368050	8, Granzyme B
Granzyme B Inhibitor II	502.5	Ac-Ile-Glu-Thr-Asp-CHO	368055	8, Granzyme B
Granzyme B Inhibitor IV	498.5	Ac-Ile-Glu-Pro-Asp-CHO	368056	8, Granzyme B
Group III Caspase Inhibitor I	610.6	Z-Ala-Glu-(OMe)-Val-Asp-(OMe)-CH ₂ F	368620	6,8,9,10
Grouo III Caspase Inhibitor II	458.5	Ac-Ala-Glu-Val-Asp-CHO	368625	
Guanosine 3', 5'-cyclic Monophosphate, Sodium Salt	367.2		370656	
Hemoglobin, Bovine Erythrocytes	64,500		3745	
Herbimycin A, <i>Streptomyces</i> sp.	574.7		375670	
IL-1 β Inhibitor	593.6		400700	
Insulin-Like Growth Factor-I, Human, Recombinant, <i>E. coli</i>	7500		407240	
Interleukin-1 β , Human, Recombinant, <i>E. coli</i>	17,000		407615	
Interleukin-6, Human, Recombinant, <i>E. coli</i>	20,300		407652	
Leupeptin, Hemisulfate	475.6	Ac-Leu-Leu-arginal, hemisulfate	108975	
c-myc Antisense Oligonucleotide, Sodium Salt	5165.7		475959	
c-myc Antisense Oligonucleotide, Negative Control, Sodium Salt	5165.7		475961	
c-myc Antisense Oligonucleotide, Fluorescein-Labeled, Sodium Salt	5741.3		475962	

Figure 2 (page 10 of 12)

Noxa Antisense Oligonucleotide, Sodium Salt	6754			492006	
Noxa Antisense Oligonucleotide, Fluorescein-Labeled, Sodium Salt	7329.5			492009	
Noxa Antisense Oligonucleotide, Negative Control, Sodium Salt	6754			492008	
p53 Antisense Oligonucleotide, Sodium Salt	6625.1			506140	
p53 Antisense Oligonucleotide, Fluorescein-Labeled, Sodium Salt	7200.6			506141	
p53 Antisense Oligonucleotide, Negative Control, Sodium Salt	6856			506142	
p53 Antisense Oligonucleotide, Negative Control, Fluorescein-Labeled, Sodium Salt	6991.6			506143	
Phenylarsine Oxide	168.0			521000	
Phenylmethylsulfonl Fluoride	174.2			52332	
Phorbol-12, 13-dibutyrate	504.6			524390	
Phorbol-12-myristate-13-acetate	616.8			524400	
Pifithrin- α	367.3			506132	
Pifithrin- α , Cyclic	349.3			506134	
PJ34	331.8			528150	
Puuphenone, <i>Hyrtios</i> sp.	328.2			540505	
1-Pyrrolidinecarbodithioic Acid, Ammonium Salt	164.3			548000	
Spermine, Tetrahydrochloride	348.3			5677	
Sulindac	356.4			574100	
Sulindac Sulfide	340.4			574102	
Sulindac Sulfone	372.4			574105	
Superoxide Dismutase, Bovine Erythrocytes	32,500			574594	
Superoxide Dismutase, Human,				574595	

Figure 2 (page 11 of 12)

Recombinant, <i>E. coli</i>					
Na-Tosyl-Lys Chloromethyl Ketone, Hydrochloride	369.3			616382	
TTFA	222.2			654050	
(±)-Verapamil, Hydrochloride	491.1			676777	

Figure 2 (page 12 of 12)

Figure 3
Page 1 of 7
SUMMARY OF APOPTOSIS KITS

Kit Type	Cat. No.	Type of Sample	Equipment Required	Measures
FragEL™	QIA21 QIA33	Slides of frozen or fixed cells or tissue	Light Microscope	DNA Fragmentation
FragEL™, Fluorescent	QIA39	Slides of frozen or fixed cells or tissue; cell suspensions	Fluorescent Microscope or Flow Cytometer	DNA Fragmentation
Suicide Track™ DNA Ladder Isolation	AM41	Cells	Agarose Electrophoresis	DNA Fragmentation
Annexin V	PF032 PF036 ^a	Live/Apoptotic Cells	Flow Cytometer or Fluorescent Microscope	Externalized Phosphoserine
Nucleosome ELISA	QIA25	Cells/Cell Lysates	Microplate Reader	Free Nucleosomes
Cell Death Detection	QIA20	Cell Culture Supernatants	Microplate Reader	Nuclear Matrix Protein 41/7
Cytochrome c Release	QIA87	Cells	Immunoblotting Equipment, Homogenizer	Cytochrome c translocated from mitochondria to cytosol
Cytochrome c ELISA	QIA74	Cell Lysates	Microplate Reader	Cytochrome c
MitoCapture™	475866	Live/Apoptotic Cells	Flow Cytometer or Fluorescent Microscope	Mitochondrial Membrane Potential
Glutathione	QIA89	Cells	Fluorescent Plate Reader or Fluorescent Microscope	Glutathione
Caspase Flow Cytometric	QIA78	Intact Cells	Flow Cytometer or Fluorescent Microscope	General Caspase Activity
Caspase-3, Intracellular	235430 235432	Intact Cells	Flow Cytometer or Fluorescent Microscope	Caspase-3 Activity
Caspase Assays, Fluorometric	218791 (Caspase-1) 218793 (Caspase-2) QIA70 (Caspase-3) HTS02 (Caspase-3) 218801 (Caspase-5) 218803 (Caspase-6) QIA71 (Caspase-8)	Cell Lysates	Fluorescent Microplate Reader	Caspase Activity

Figure 3
Page 2 of 7

HTS03 (Caspase-8) QIA72 (Caspase-9) HTS04 (Caspase-9) 218811 (Caspase-10)		
Caspase Assays, Colorimetric	Cell Lysates	Caspase Activity
218790 (Caspase-1) 218734 (Caspase-1) 218792 (Caspase-2) 235419 (Caspase-3) 235418 (Caspase-3) 218801 (Caspase-5) 218802 (Caspase-6) 218824 (Caspase-9) 218810 (Caspase-10)		
a. Requires labeled streptavidin to be supplied by the user.		

Figure 3
Page 3 of 7

Product Name	Mol. Wt.	Sequence	Known Target Caspases	Cat. No.	Size
Acridine Orange	301.8			113000	500 mg 1 g
7-Amino-4-methylcoumarin	175.2			164545	10 mg
7-Amino-4-(trifluoromethyl) coumarin	229.2			164580	50 mg
Caspase Active Site Peptide	688.8			235416	5 mg
Caspase Substrate I, Fluorogenic	648.6	Val-Ala-Asp-AFC	1,3,4,7	218743	5 mg
Caspase Substrate Set I, Colorimetric			1,3,6	218780	1 set
Caspase Substrate Set II, Fluorogenic			1,2,3,4,5,6,9	218782	1 set
Caspase Substrate Set III, Colorimetric				218808	1 set
Caspase Substrate Set IV, Fluorogenic				218809	1 set
Caspase-1 Substrate I	1584.7	H-Asn-Glu-Ala-Tyr-Val-His- Asp	1,4	400016	1 mg
Caspase-1 Substrate II, Fluorogenic	1233.4	DABCYL, Tyr-Val-Ala-Asp- Ala-Pro-Val-EDANS	1,4	400018	500 µg
Caspase-1 Substrate III, Fluorogenic	665.7	Ac-Tyr-Val-Ala-Asp-AMC	1,4	400020	1 mg 5 mg
Caspase-1 Substrate IV, Colorimetric	628.6	Ac-Tyr-Val-Ala-Asp-ρNA	1,4	400025	5 mg
Caspase-1 Substrate V, Fluorogenic	1145.1	MCA-Tyr-Val-Ala-Asp-Ala- Pro-Lys(DNP)-OH	1,4	400017	1 mg

Figure 3
Page 4 of 7

Caspase-1 Substrate VI, Fluorogenic	811.8	Z-Tyr-Val-Ala-Asp-AFC	1,4	688225	1 mg 5 mg
Caspase-1 Substrate VII, Colorimetric	747.7	Ac-Trp-Glu-His-Asp- ρNA	1,4,5	218736	5 mg
Caspase-1 Substrate VIII, Fluorogenic	1277.3		1	218737	1 mg
Caspase-1 Substrate IX, Fluorogenic	1144.2	MCA-Tyr-Val-Ala-Asp-Ala- Pro-Lys-(DNP)-NH ₂	1	218738	1 mg
Caspase-1 Substrate X, Fluorogenic	784.8	Ac-Trp-Glu-His-Asp-AMC	1	218739	5 mg
Caspase-1 Substrate XI, Fluorogenic	1318.3	FITC-Tyr-Val-Ala-Asp-Ala- Pro-Lys-(DNP)-OH	1	218795	1 mg
Caspase-1 Substrate XI, Standard	855.9	FITC-Tyr-Val-Ala-Asp-OH	1	218796	1 mg
Caspase-1 Substrate XII, Fluorogenic	719.7	Ac-Tyr-Val-Ala-Asp-AFC	1	688224	5 mg
Caspase-1 Substrate XIV, Water Soluble, Colorimetric	747.7	Ac-Trp-Glu-His-Asp- ρNA	1,4,5	218822	5 mg
Caspase-1/ Caspase-4 Substrate I, Fluorogenic	754.8	Ac-Trp-Glu-Ala-Asp-AMC	1,4	400005	1 mg 5 mg
Caspase-1/ Caspase-4 Substrate II, Fluorogenic	688.7	Ac-Trp-Glu-Ala-Asp-AMC	1,4	400006	1 mg 5 mg
Caspase-1/ Caspase-4 Substrate III, Colorimetric	681.7	Ac-Trp-Glu-Ala-Asp- ρNA	1,4	400007	5 mg
Caspase-1/ Caspase-4 Substrate IV	651.7	Ac-Trp-Val-Ala-Asp- ρNA	1,4	400008	5 mg
Caspase-2 Substrate I, Fluorogenic	862.8	Z-Val-Asp-Val-Ala-Asp-AFC	2	218740	1 mg 5 mg
Caspase-2 Substrate II, Fluorogenic	1270.3	MCA-Val-Asp-Val-Ala-Asp-	2	218741	1 mg

Figure 3
Page 5 of 7

Fluorogenic		Gly-Trp-Lys-(DNP)-NH ₂			
Caspase-2 Substrate III, Fluorogenic	714.7	MCA-Val-Asp-Val-Ala-Asp-Gly-Trp-Lys-(DNP)-NH ₂	2	218815	5 mg
Caspase-2 Substrate IV, Colorimetric	680.7	Ac-Val-Asp-Val-Ala-Asp-pNA	2	218820	5 mg
Caspase-2 Substrate V, Fluorogenic	776.8	Ac-Leu-Asp-Glu-Ser-Asp-AMC	2	218818	1 mg 5 mg
Caspase-3 Substrate I, Colorimetric	638.6	Ac-Asp-Glu-Val-Asp-pNA	3,6,7,8,10	235400	5 mg
Caspase-3 Substrate II, Fluorogenic	675.6	Ac-Asp-Glu-Val-Asp-AMC	3,6,7,8,10	235425	1 mg 5 mg
Caspase-3 Substrate III, Fluorogenic	1155.1	MCA-Asp-Glu-Val-Asp-Ala-Pro-Lys(DNP)-OH	3,6,7,8,10	235426	1 mg
Caspase-3 Substrate IV, Fluorogenic	821.7	Z-Asp-Glu-Val-Asp-AFC	3,6,7,8,10	264150	1 mg 5 mg
Caspase-3 Substrate V, Fluorogenic	1359.4	MCA-Val-Asp-Gln-Met-Asp-Gly-Trp-Lys-(DNP)-NH ₂	3	218751	1 mg
Caspase-3 Substrate VI, Fluorogenic	1213.2	MCA-Asp-Glu-Val-Asp-Ala-Arg-Lys-(DNP)-NH ₂	3,6,7,8,10	218752	1mg
Caspase-3 Substrate VII, Fluorogenic	728.6	Ac-Asp-Glu-Val-Asp-AFC	3,6,7,8,10	264151	1 mg 5 mg
Caspase-3 Substrate VIII, Water Soluble, Colorimetric	638.6	Ac-Asp-Glu-Val-Asp-pNA	3,6,7,8,10	218823	5 mg
Caspase-4 Substrate I, Fluorogenic	1227.3	MCA-Leu-Glu-Val-Asp-Gly-Trp-Lys-(DNP)-NH ₂	4	218756	1 mg
Caspase-4 Substrate II, Fluorogenic	727.7	Ac-Leu-Gu-Val-Asp-AFC	4	218748	1 mg 5 mg
Caspase-5 Substrate II, Fluorogenic	838.8	Ac-Trp-Glu-His-Asp-AFC	1,4,5	218754	1 mg 5 mg

Figure 3
Page 6 of 7

Caspase-6 Substrate I, Fluorogenic	673.7	Ac-Val-Glu-Ile-Asp-AMC	6	218760	5 mg
Caspase-6 Substrate II, Colorimetric	636.7	Ac-Val-Glu-Ile-Asp- pNA	6	218762	5 mg
Caspase-6 Substrate III, Fluorogenic	819.8	Z-Val-Glu-Ile-Asp-AFC	6	218763	5 mg
Caspase-6 Substrate V, Fluorogenic	751.7	Ac-Val-Glu-His-Asp-AFC	6,9,10	218788	1 mg 5 mg
Caspase-6 Substrate VI, Fluorogenic	744.8	Ac-Val-Lys-Met-Asp-AFC	6	218789	1 mg 5 mg
Caspase-6 Substrate VII, Fluorogenic	712.7	Ac-Val-Asn-Leu-Asp-AFC	6	219003	1 mg 5 mg
Caspase-7 Substrate I, Fluorogenic	1327.3	MCA-Val-Asp-Gln-Val-Asp- Gly-Trp-Lys-(DNP)-NH ₂	7	218768	1 mg
Caspase-9 Substrate I, Fluorogenic	765.7	Ac-Leu-Glu-His-Asp-AFC	4,5,9	218765	1 mg 5 mg
Caspase-13 Substrate I, Colorimetric	666.6	Ac-Leu-Glu-Glu-Asp- pNA	13	219006	5 mg
DRONC Substrate I, Fluorogenic	730.7	Ac-Thr-Gln-Thr-Glu-AFC		287990	1 mg 5 mg
DRONC Substrate II, Fluorogenic	716.6	Ac-Thr-Gln-Thr-Asp-AFC		287995	1 mg 5 mg
DRONC Substrate III, Fluorogenic	786.7	Ac-Gly-Ile-Glu-Thr-Asp-AFC		287996	1 mg 5 mg
DRONC Substrate IV, Fluorogenic	716.8	Ac-Val-Asp-Val-Ala-Asp- AMC		287997	1 mg 5 mg
D ₂ R	560.5			251300	1 mg
(DMe) ₂ R	588.6			251305	1 mg

Figure 3
Page 7 of 7

Granzyme B Enzyme Overlay Membrane	Z-Ala-Ala-Asp-AFC	8, Granzyme B	368045	1 sheet
Granzyme B Substrate I, Colorimetric	638.6 Ac-Ile-Glu-Thr-Asp-AFC	8, Granzyme B	368057	5 mg
Granzyme B Substrate II, Fluorogenic	821.8 Z-Ile-Glu-Thr-Asp-AFC	8, Granzyme B	368059	1 mg 5 mg
Granzyme B Substrate IV	481.6 Boc-Ala-Ala-Asp-S-benzyl	8, Granzyme B	368063	5 mg
Granzyme B Substrate VI	827.9 Ac-Ile-Glu-Pro-Asp-Trp-Gly-Ala-NH ₂	Granzyme B	368065	5 mg
Granzyme B Substrate VII	884.9 Ac-Ile-Glu-Pro-Asp-Trp-Asn-Ala-NH ₂	Granzyme B	368066	5 mg
Granzyme B Substrate VIII, Colorimetric	634.6 Ac-Ile-Glu-Pro-Asp-pNA	Granzyme B	368067	5 mg
Granzyme B Substrate IX, Fluorogenic	671.7 Ac-Ile-Glu-Pro-Asp-AMC	Granzyme B	368068	1 mg 5 mg
Granzyme B Substrate X, Fluorogenic	725.0 Ac-Ile-Glu-Pro-Asp-AMC		368062	5 mg
p-Nitroaniline	138.1		483350	50 g

Figure 4
Page 1 of 6

Product Name	Mol. Wt.	Cat. No.	Size
A23187, Free Acid, <i>Streptomyces chartreusensis</i>	523.6	100105	1 mg 5 mg 10 mg 50 mg
A23187, Mixed Calcium Magnesium Salt		100106	10 mg
N-Acetyl-L-cysteine	163.2	106425	5 g
Actinomycin D, <i>Streptomyces</i> sp.	1255.5	114666	1 set 5 mg
Actinomycin D, 7-Amino-	1270.4	129935	1 mg
AG 17	282.4	658425	5 mg
AG 82	202.2	658400	5 mg
AG 490	294.3	658401	5 mg
AG 1714	199.2	121780	25 mg
Anandamide	347.5	172100	5 mg
Anisomycin, <i>Streptomyces griseolus</i>	265.3	176880	10 mg
Aphidicolin	338.5	178273	1 mg
Apoptosis Inducer Set I		178486	1 set
Apoptosis Inducer Set II		178489	1 set
Bafilomycin A1, <i>Streptomyces griseus</i>	622.8	196000	10 µg
Bak BH3 Fusion Peptide, Cell-Permeable	4404.2	196350	500 µg
Bak BH3 Fusion Peptide, Cell-Permeable, Negative Control	4362.2	196355	500 µg
Bcl-2 Binding Peptide, Cell-Permeable	3399.9	197220	1 mg
Bcl-2 Binding Peptide, Cell-Permeable, Negative Control	3357.8	197225	1 mg
Berberine, Hemisulfate	384.4	200400	1 g
Betulinic Acid	456.7	200498	5 mg
Bleomycin Sulfate, <i>Streptomyces verticillus</i>		203401	15 U
CAFdA	303.7	205500	1 mg
Calphostin C, <i>Cladosporium cladosporioides</i>	790.8	208725	50 µg 100 µg

Figure 4
Page 2 of 6

Product Name	Mol. Wt.	Cat. No.	Size
Camptothecin, <i>Camptotheca acuminata</i>	348.4	208925	50 mg
CAPE	284.3	211200	25 mg
Chelerythrine Chloride	383.8	220285	5 mg
2-Chloro-2'-deoxyadenosine	285.7	220467	10 mg
2-Chloro-2'-deoxyadenosine 5'-Triphosphate, Tetralithium Salt	549.4	220469	1 mg
Colecemid	371.4	234109	5 mg
Colechicine, <i>Colchicum autumnale</i>	399.4	234115	1 g 5 g
Corticosterone	346.5	235135	1 g
Cycloheximide	281.3	239763	1 g 5 g
Cycloheximide, High Purity	281.3	239764	100 mg 1 g
Cyclophosphamide Monohydrate	279.1	239785	1 g
Cyclosporin A, <i>Tolypocladium inflatum</i>	1202.6	239835	100 mg
Daunorubicin, Hydrochloride	564.0	251800	5 mg
Dexamethasone	392.5	265005	100 mg
2,3-Dichloro-5,8-dihydroxy-1,4-naphthoquinone	259.1	287805	50 mg
3,3'-Diindolylmethane	246.3	309900	100 mg
Dolastatin 15	837.1	320900	1 mg
Doxorubicin, Hydrochloride	580.0	324380	10 mg
(-)-Epigallocatechin Gallate	458.4	324880	10 mg
Erbstatin Analog	194.2	324930	1 mg
Etoposide	588.6	341205	25 mg
Etoposide Phosphate	668.6	341206	5 mg
ET-18-OCH ₃	523.7	341207	5 mg
5-Fluorouracil	130.1	343922	1 g
Folimycin, <i>Streptomyces</i> sp.	866.1	344085	10 µg

Figure 4
Page 3 of 6

Product Name	Mol. Wt.	Cat. No.	Size
Forskolin, <i>Coleus forskohlii</i>	410.5	344270	10 mg 25 mg 50 mg
H-7, Dihydrochloride	364.3	371955	1 mg 5 mg
Genistein	270.2	345834	20 mg 50 mg
[6]-Gingerol, <i>Zingiber officinale</i>	294.4	345868	5 mg
Glycodeoxycholic Acid, Sodium Salt	471.6	361311	5 g
H-7, Dihydrochloride	364.3	371955	1 mg 5 mg
H-89, Dihydrochloride	519.3	371963	1 mg
HA14-1	409.2	371971	1 set 2 mg
Harringtonine, <i>Cephalotaxus hainanensis</i>	531.6	372125	5 mg
Homoharringtonine, <i>Cephalotaxus hainanensis</i>	545.6	384500	5 mg
HMBA	200.3	387750	500 mg
4-Hydroxynonenal	156.2	393204	1 mg
4-Hydroxyphenylretinamide	391.6	390900	5 mg
Hydroxyurea	76.1	400046	5 g
Indanocine	339.4	402080	1 mg
Ionomycin, Free Acid, <i>Streptomyces conglobatus</i>	709.0	407950	1 mg 5 mg 10 mg
Ionomycin, Calcium Salt, <i>Streptomyces conglobatus</i>	747.1	407952	1 mg 5 mg 10 mg 25 mg
Kaempferol	286.2	420345	25 mg

Figure 4
Page 4 of 6

Product Name	Mol. Wt.	Cat. No.	Size
KN-93	501.0	422708	1 mg 5 mg
Licochalcone-A, Synthetic	338.4	435800	10 mg 50 mg
Methotrexate	454.5	454125	100 mg
Mitomycin C, <i>Streptomyces caespitosus</i>	334.3	47589	2 mg
Mitomycin C, <i>Streptomyces caespitosus</i> , Carrier-Free	334.3	475820	10 mg
MT-21	281.4	475952	10 mg
MT-21, Negative Control	169.2	475953	5 mg
Muristerone A, <i>Ipomoea</i> spp.	496.6	475946	1 mg
(±)-S-Nitroso-N-acetylpenicillamine	220.2	487910	1 set 20 mg
S-Nitrosoglutathione	336.3	487920	1 set 10 mg 50 mg
Okadaic Acid, <i>Prorocentrum concavum</i>	805.0	495604	10 µg 25 µg 100 µg
Oligomycin		495455	10 mg
p53 Activator, Cell-Permeable	4434.1	506131	500 µg
Paclitaxel, <i>Taxus</i> sp.	853.9	580555	5 mg 25 mg 100 mg
Phorbol-12-myristate-13-acetate	616.8	524400	1 mg 5 mg 10 mg 25 mg
(Pivaloyloxy)methyl Butyrate	202.3	527998	25 mg

Figure 4
Page 5 of 6

Product Name	Mol. Wt.	Cat. No.	Size
Puromycin, Dihydrochloride	544.4	540222	25 mg 100 mg
1-Pyrrolidinecarbodithioic Acid, Ammonium Salt	164.3	548000	100 mg
Quercetin, Dihydrate	338.3	551600	100 mg
Rapamycin	914.2	553210	100 µg 1 mg
(-)-Reveromycin B, Synthetic	660.8	554719	50 µg
Scriptaid	326.4	565730	5 mg
Smac-N7 Peptide	725.9	567370	1 mg 5 mg
Smac-N7 Peptide, Cell-Permeable	3051.7	567375	1 mg
Sodium Butyrate	110.1	567430	250 mg
Sodium 4-Phenylbutyrate	186.2	567616	100 mg
Spermine, Tetrahydrochloride	348.3	5677	5 g
D-erythro-Sphingosine, Free Base, Bovine Brain	299.5	567725	10 mg
D-erythro-Sphingosine, Free Base, Bovine Brain, High Purity	299.5	567726	10 mg
D-erythro-Sphingosine, N-Acetyl-	341.5	110145	5 mg
D-erythro-Sphingosine, N,N-Dimethyl-	327.6	310500	5 mg
D-erythro-Sphingosine, N-Hexanoyl-	397.6	376650	5 mg
D-erythro-Sphingosine, N-Octanoyl-	425.7	219540	5 mg
Staurosporine, <i>Streptomyces</i> sp.	466.5	569397	100 µg
Sulfasalazine	398.4	573500	100 mg
Sulindac	356.4	574100	1 g
Tamoxifen Citrate	563.7	579000	100 mg
Tamoxifen, 4-Hydroxy-, (Z)-	387.5	579002	5 mg
Sulindac Sulfide	340.4	574102	5 mg
Thapsigargin	650.8	586005	1 mg
α-Toxin, <i>Staphylococcus aureus</i>	33,000	616385	250 µg
TRAIL, Human, Recombinant, <i>E. coli</i>	23,000	616375	100 µg

Figure 4
Page 6 of 6

Product Name	Mol. Wt.	Cat. No.	Size
Trichostatin A, <i>Streptomyces</i> sp.	302.4	647925	1 mg
O-Trenox	899.9	499300	10 mg
Topotecan, Hydrochloride	457.9	614800	1 mg
Valinomycin, <i>Streptomyces fulvissimus</i>	1111.3	676377	25 mg 100 mg
(±)-Verapamil, Hydrochloride	491.1	676777	100 mg
Veratridine	673.8	676950	5 mg
Vicenistatin	500.7	676790	500 µg
Vitamin D ₃ , 1α,25-Dihydroxy-	416.7	679101	50 µg
Vitamin E Succinate	530.8	679130	100 mg

AGENT	DOSE	SOLVENT FOR STOCK SOLUTION	CAT. NO.
Actinomycin D	500 ng/ml	Methanol	114666
Aphidocolin	2 µg/ml	DMSO	178273
A23187	10 µg	DMSO	100105
Caffeine	16 mM	Boiling H ₂ O	205548
Camptothecin	4 µg/ml	DMSO	208925
Cycloheximide	100 µg/ml	H ₂ O	239764
Dexamethasone	1 µM	Ethanol	265005
Doxorubicin (Adriamycin)	0.2 µg/ml	H ₂ O	324380
5-Fluorouracil	25 µg/ml	DMSO, Hot H ₂ O	343922
Hydroxyurea	500 nM	H ₂ O	400046
Paclitaxel (TAXOL)	100 – 580 nM	DMSO	580555
Staurosporine	500 nM	DMSO	569397
Thymidine	2 mM	PBS	6060
Vinblastine	60 nM	Methanol	677175

FIG. 5

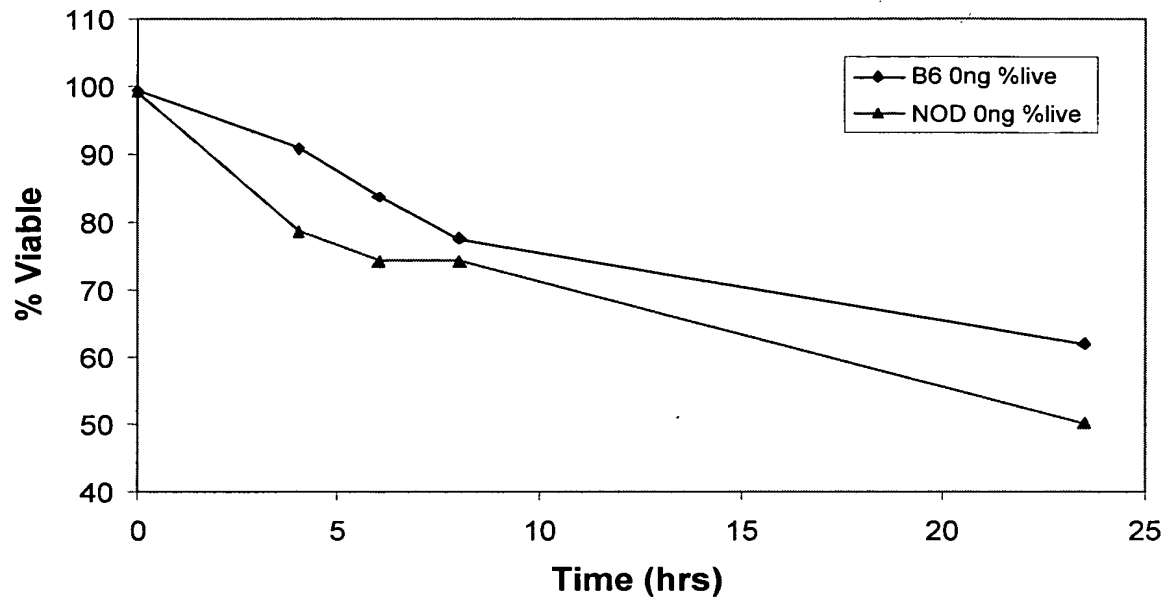


FIG. 6

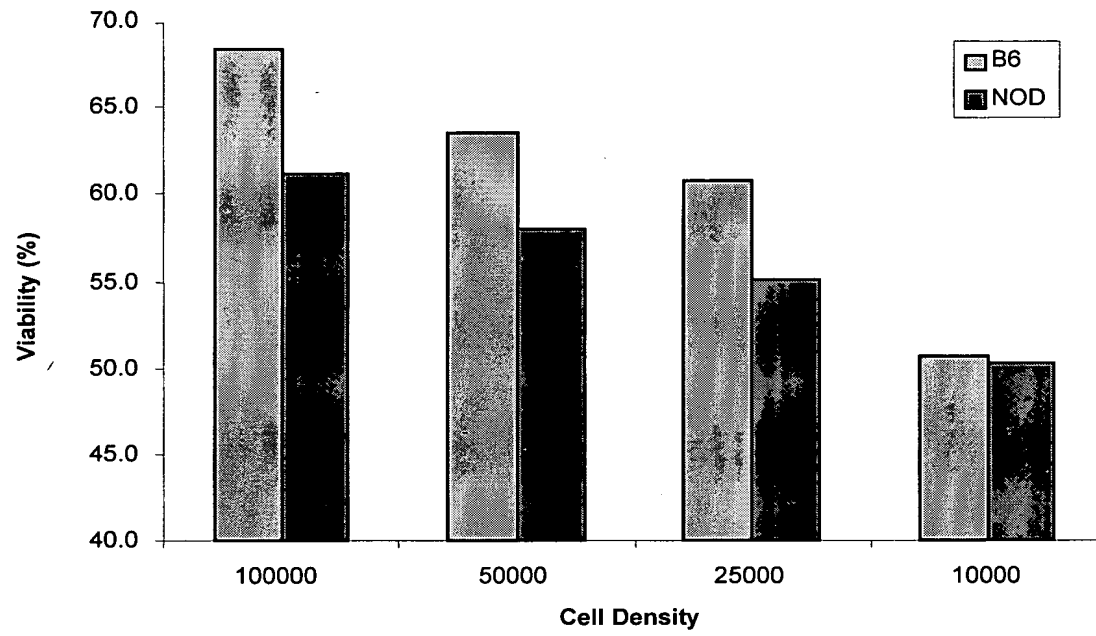


FIG. 7

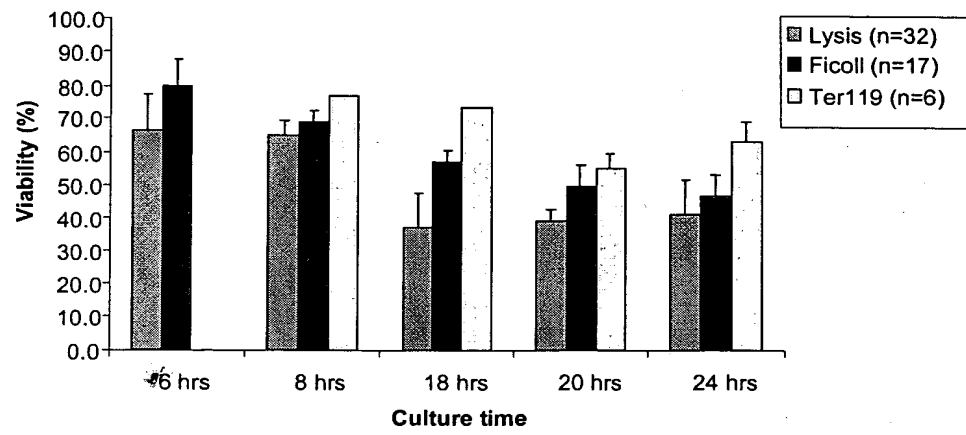


FIG. 8

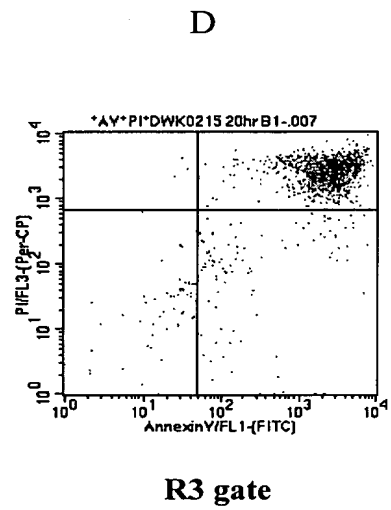
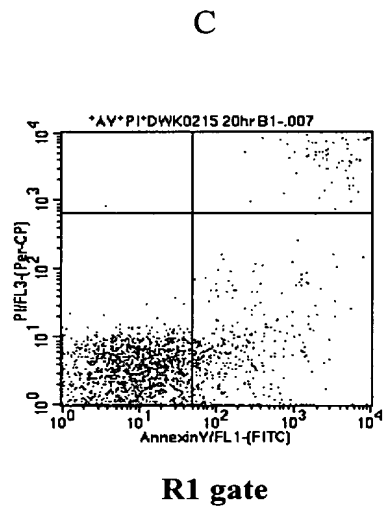
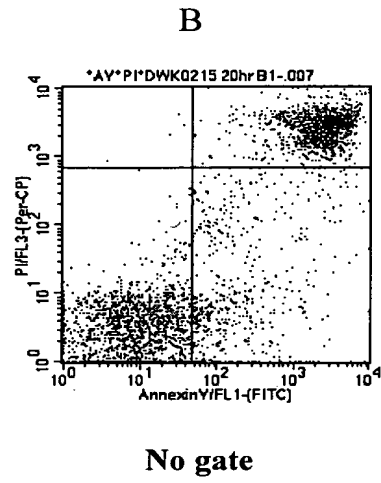
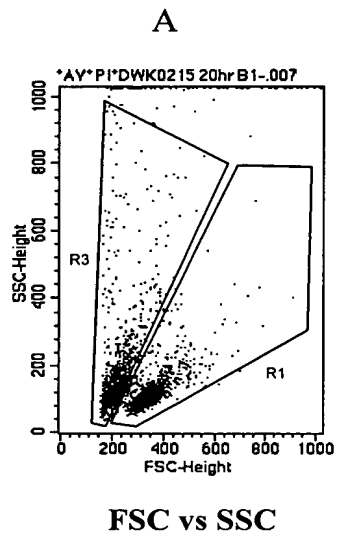
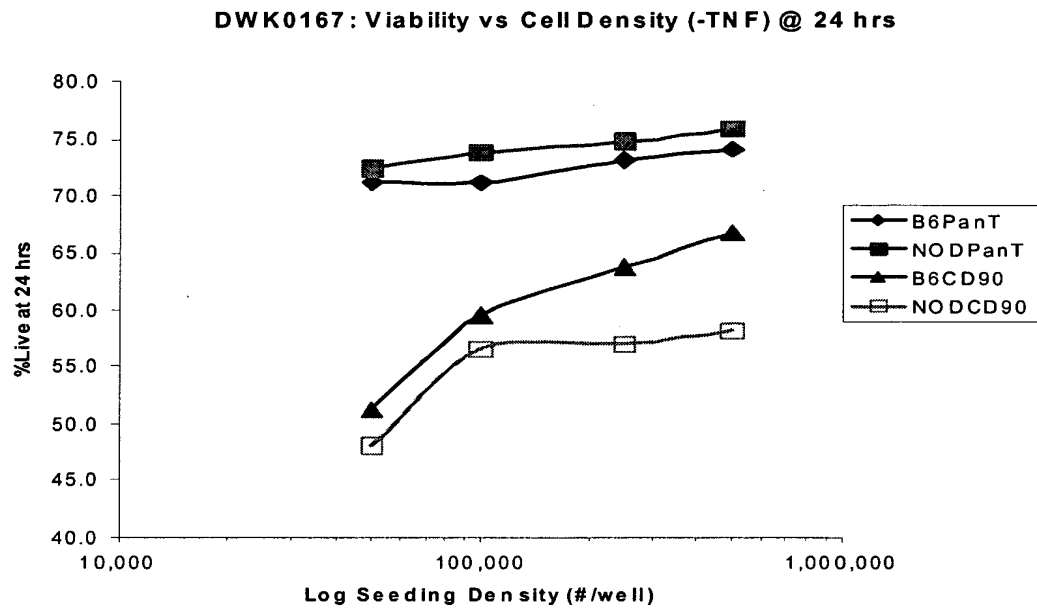
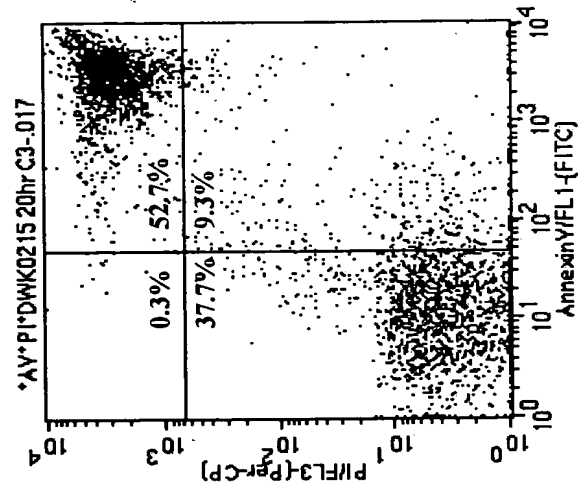


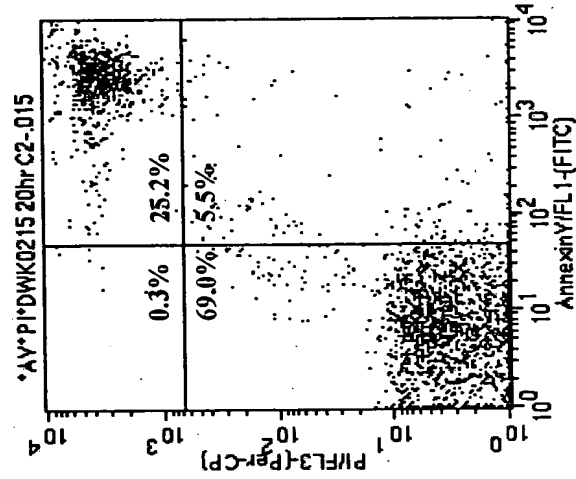
FIG. 9A



CD90/Ter119



PanT



Ter119

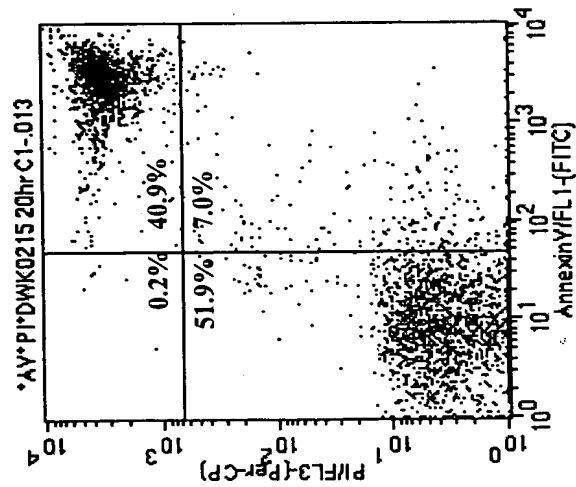


FIG. 9B

FIG. 10

UR Quadrant

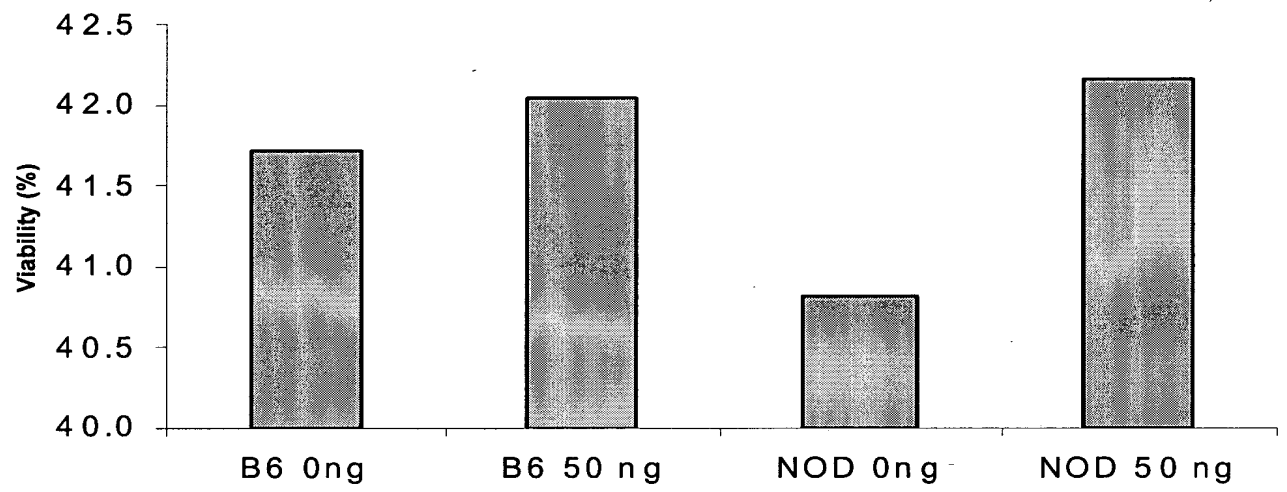


FIG. 11

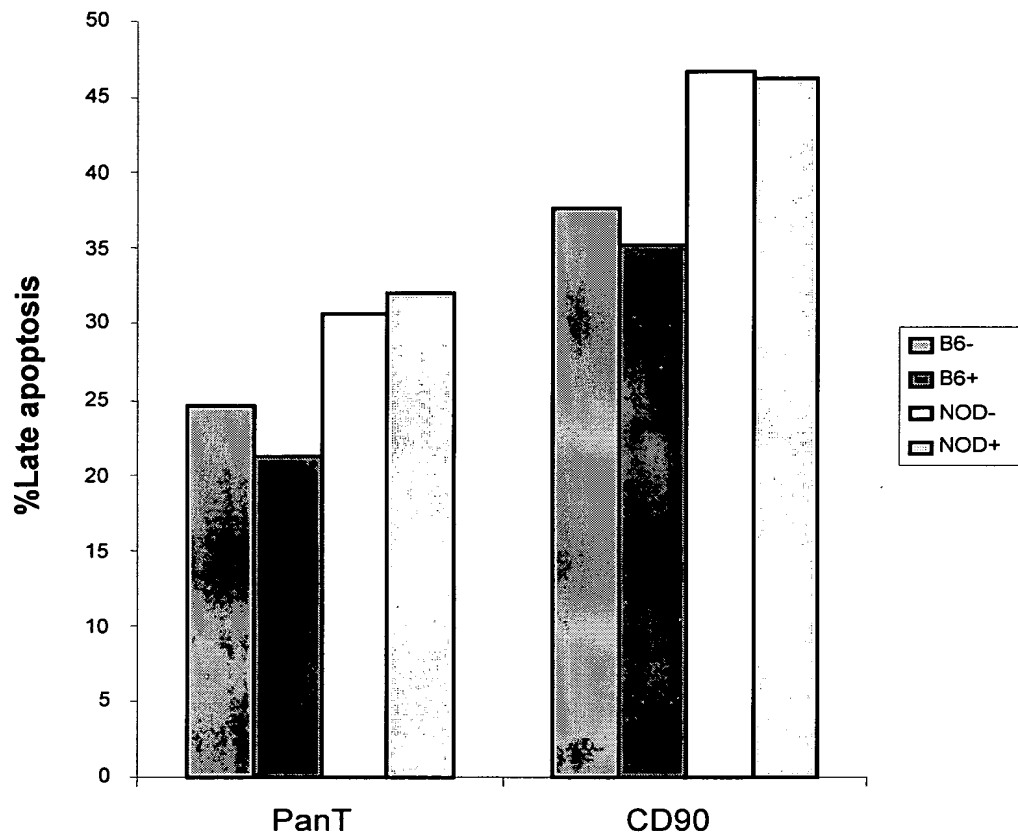


FIG. 12

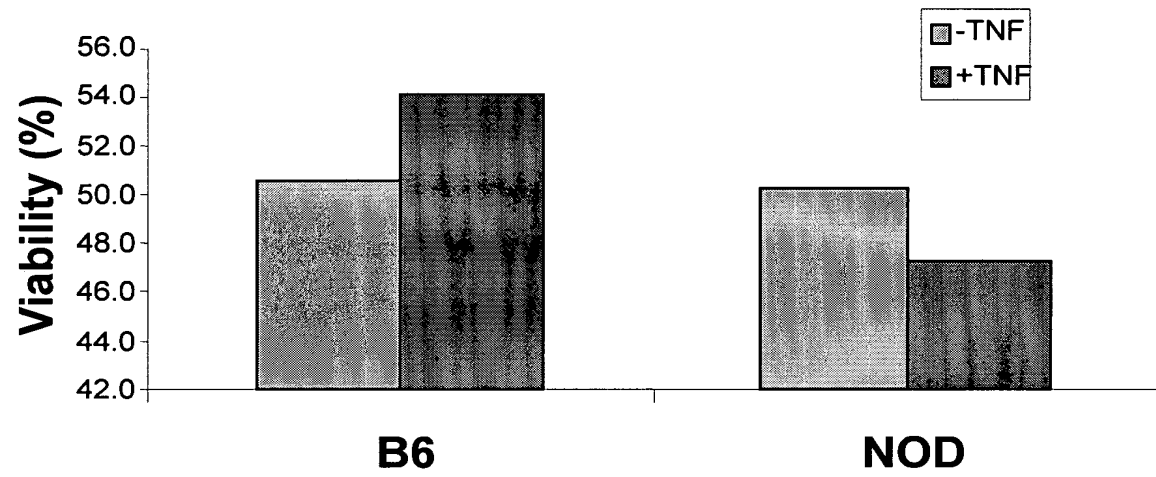
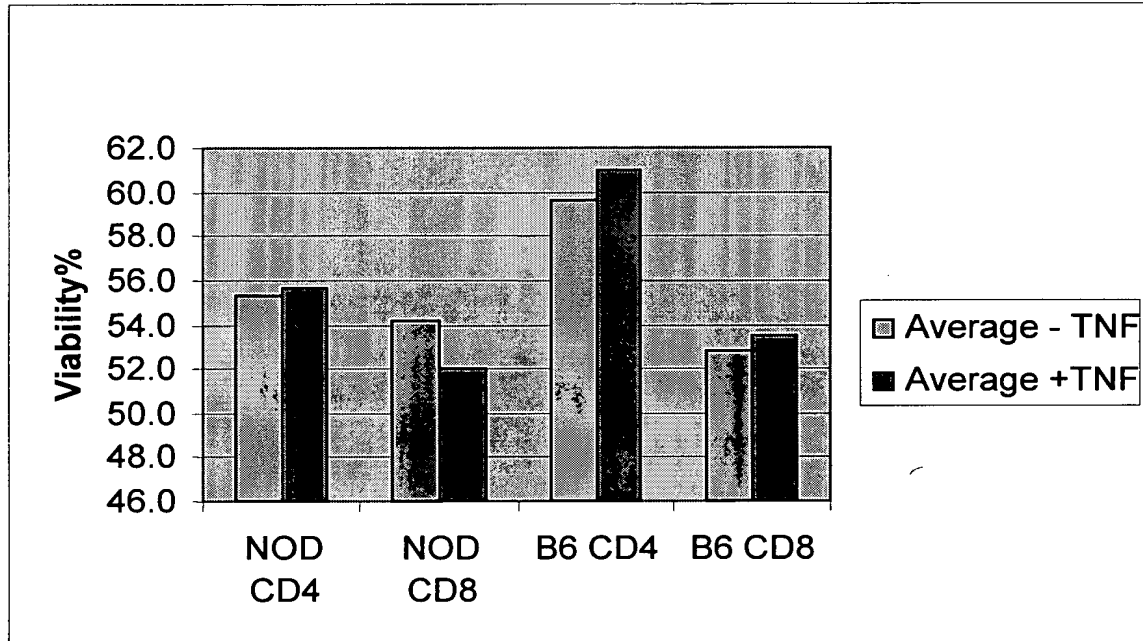


FIG. 13



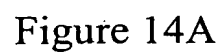


Figure 14A

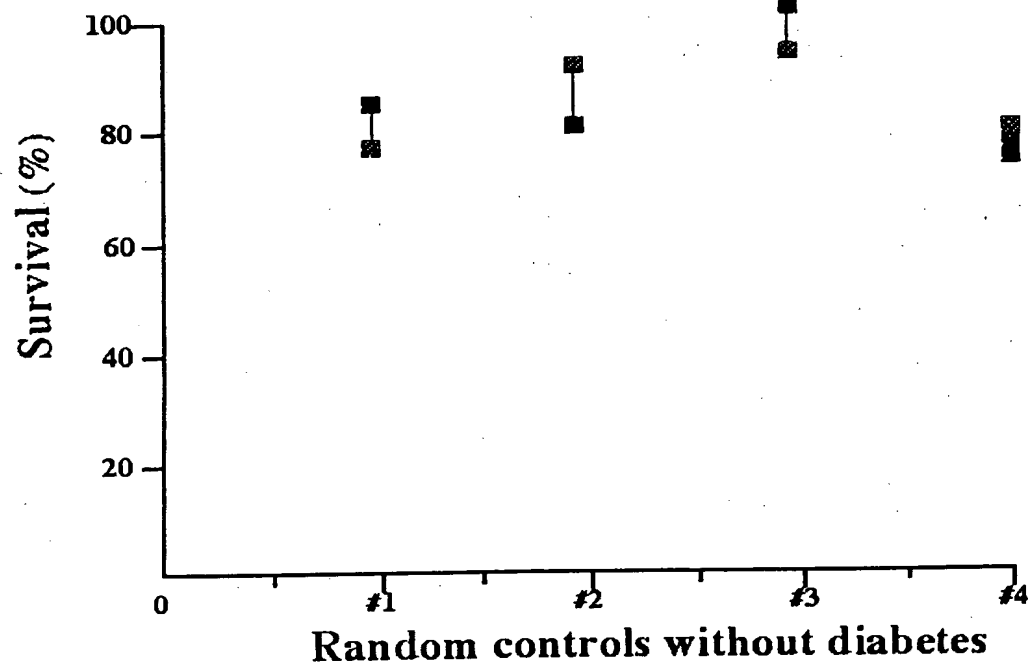


Figure 14B

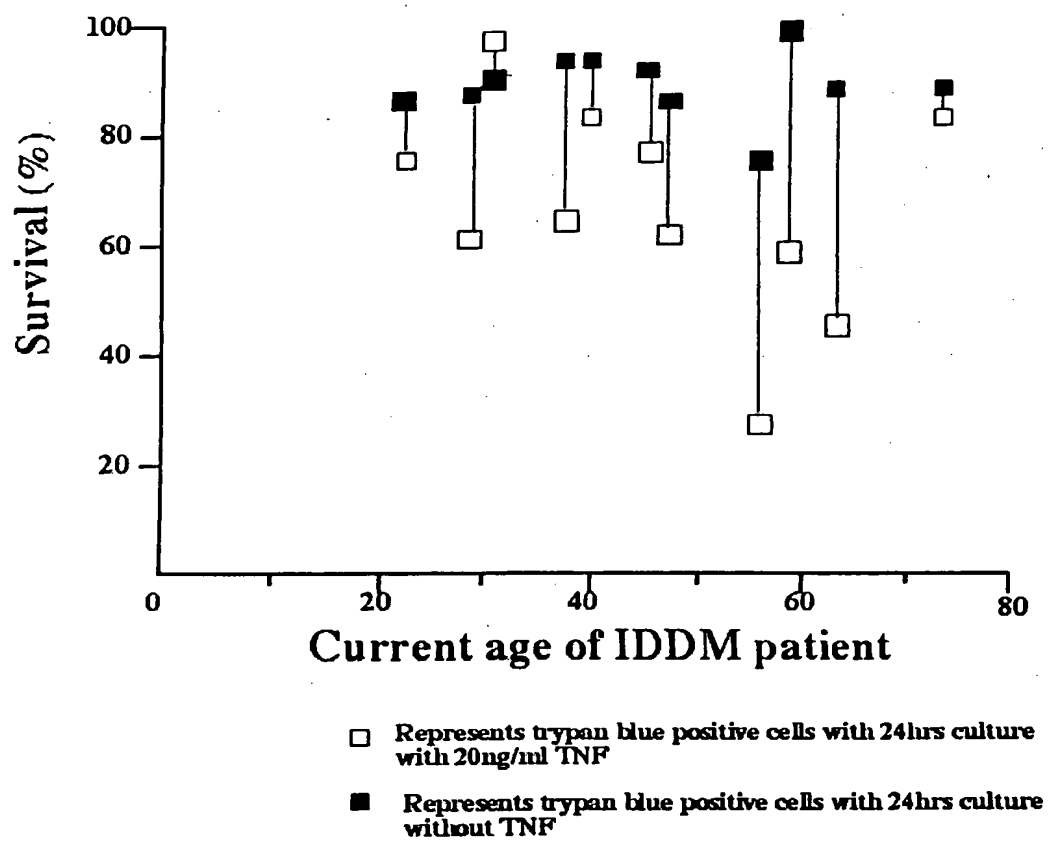


Figure 14C

BEST AVAILABLE COPY

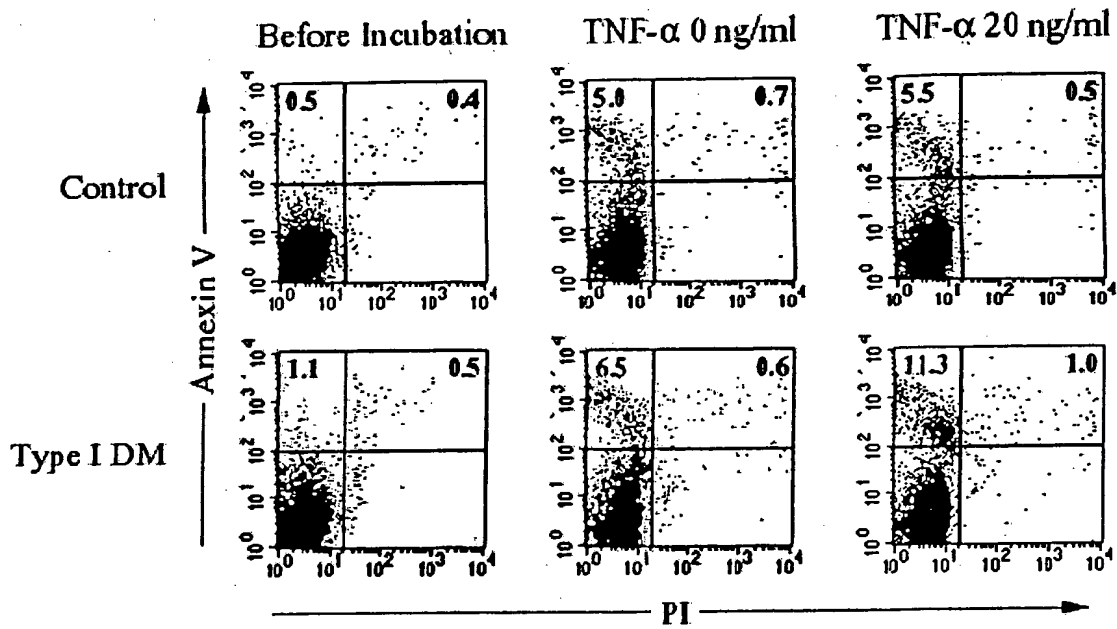


Figure 15A

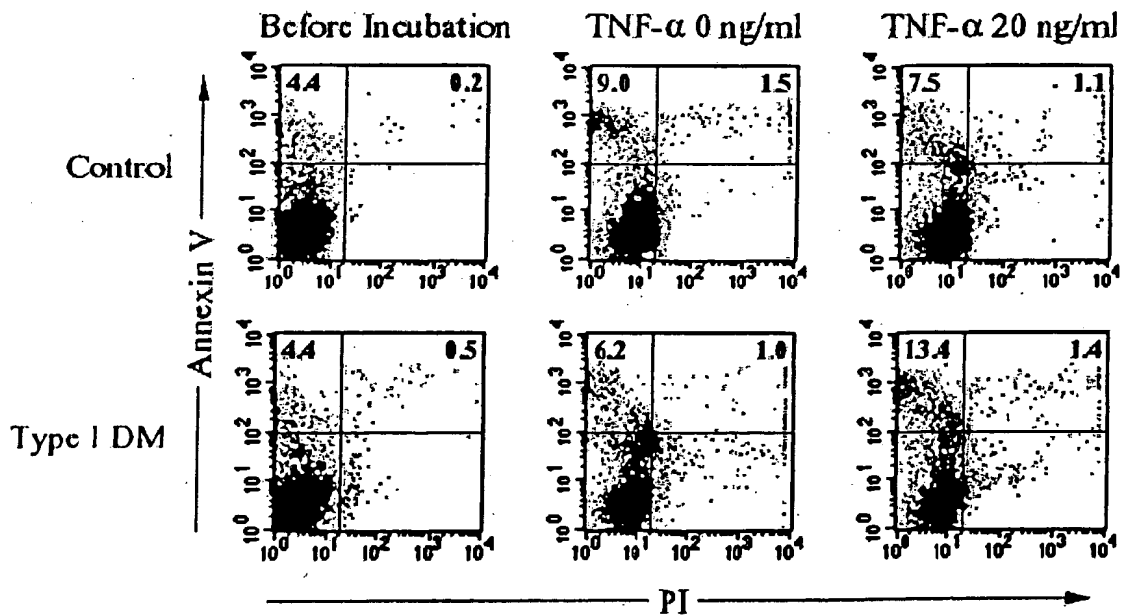
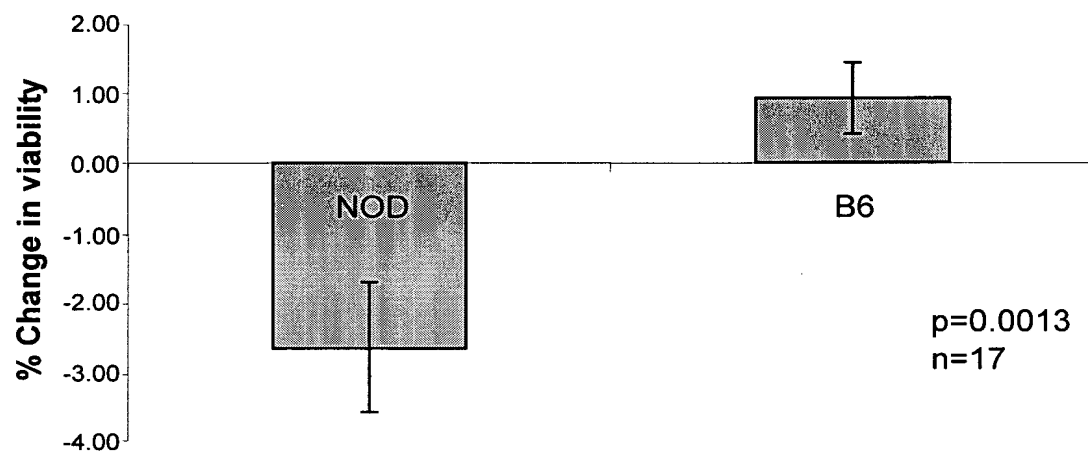


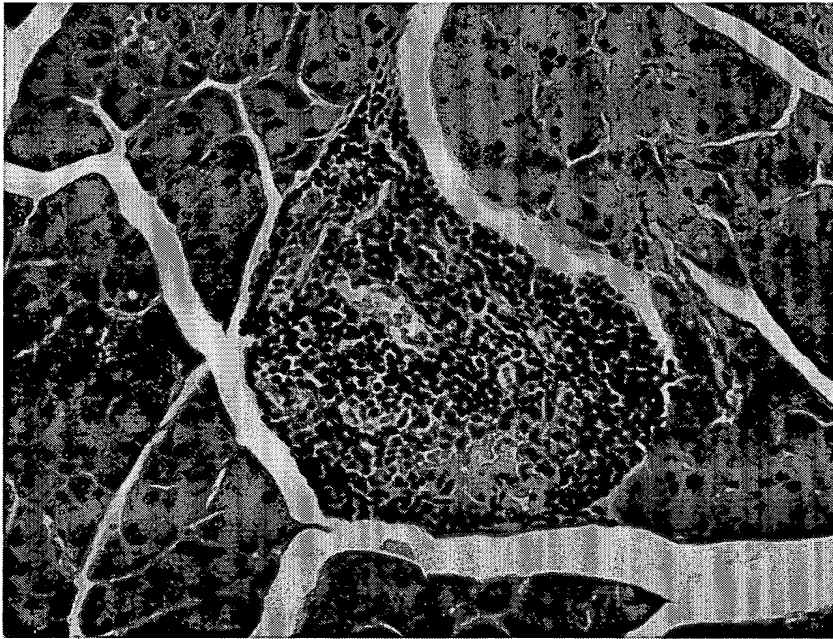
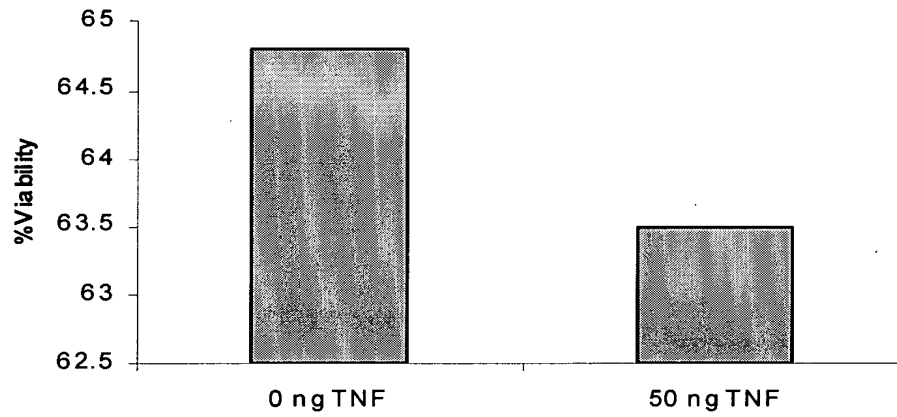
Figure 15B

FIG. 16



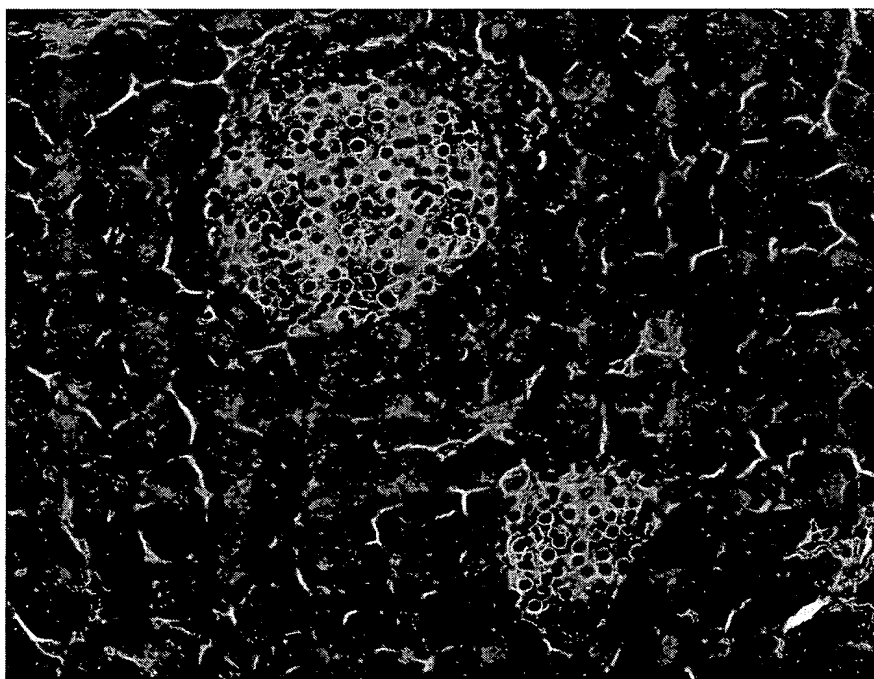
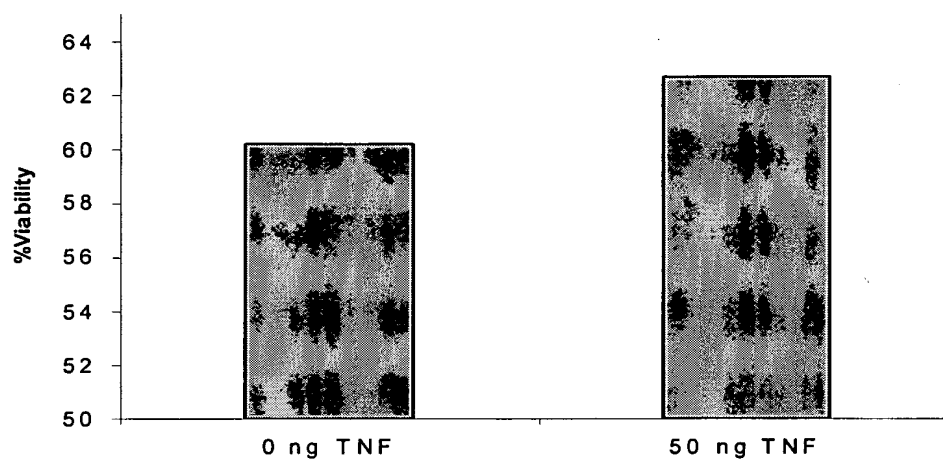
BEST AVAILABLE COPY

FIG. 17A



BEST AVAILABLE COPY

FIG. 17B



BEST AVAILABLE COPY

FIG. 17C

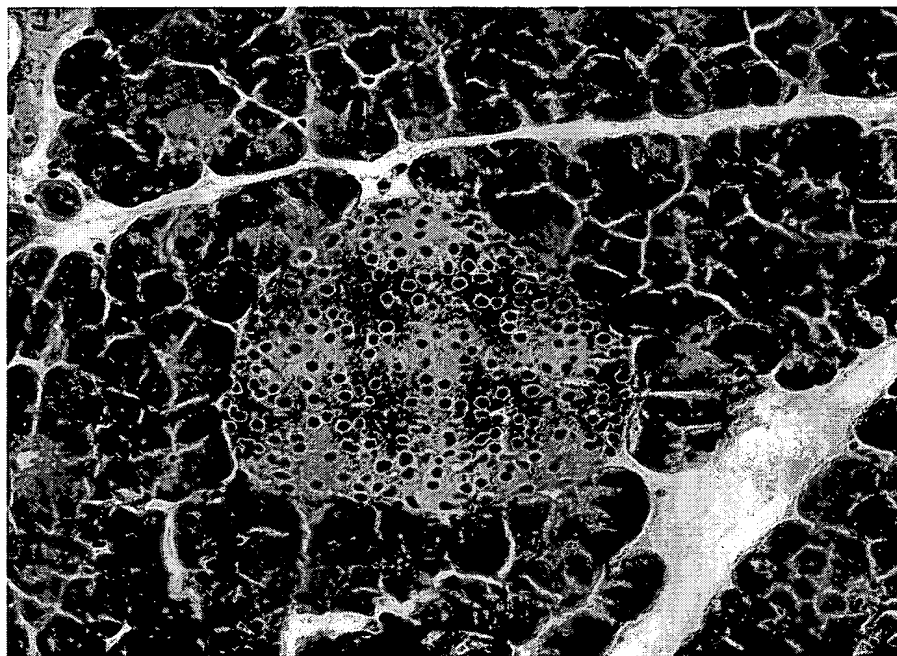
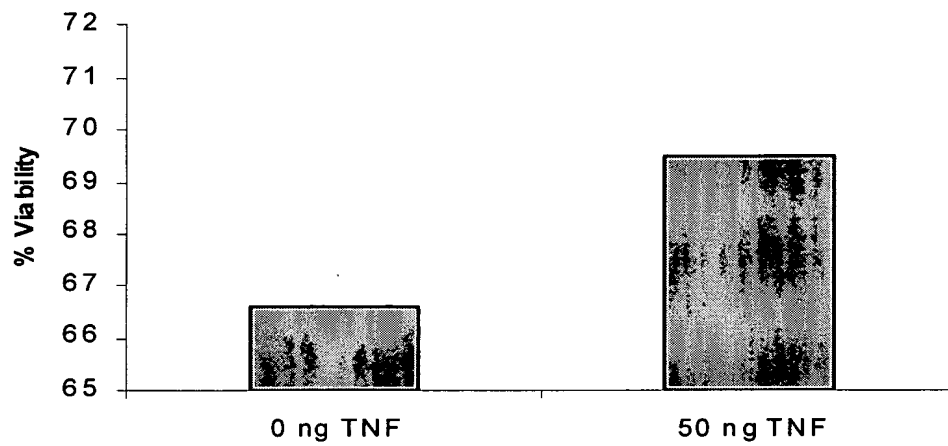


FIG. 18A

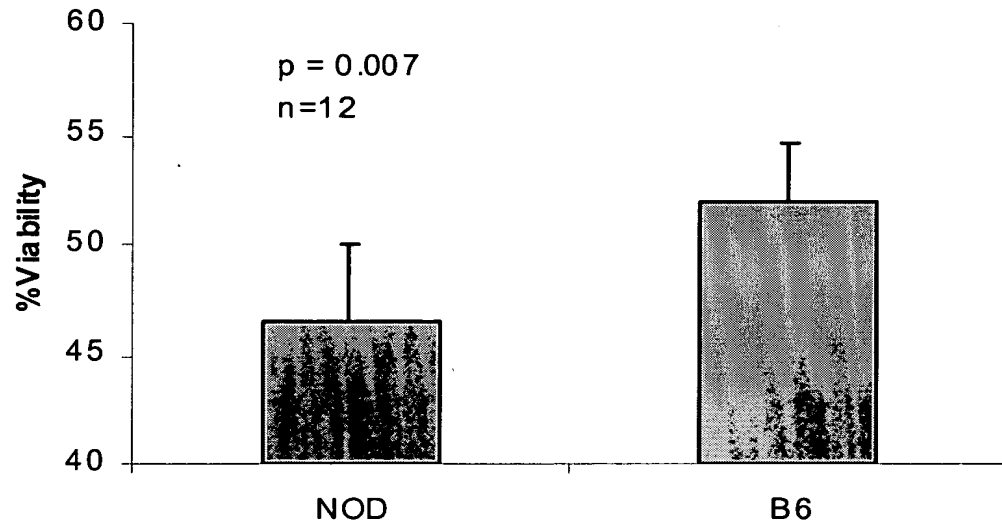


FIG. 18B

